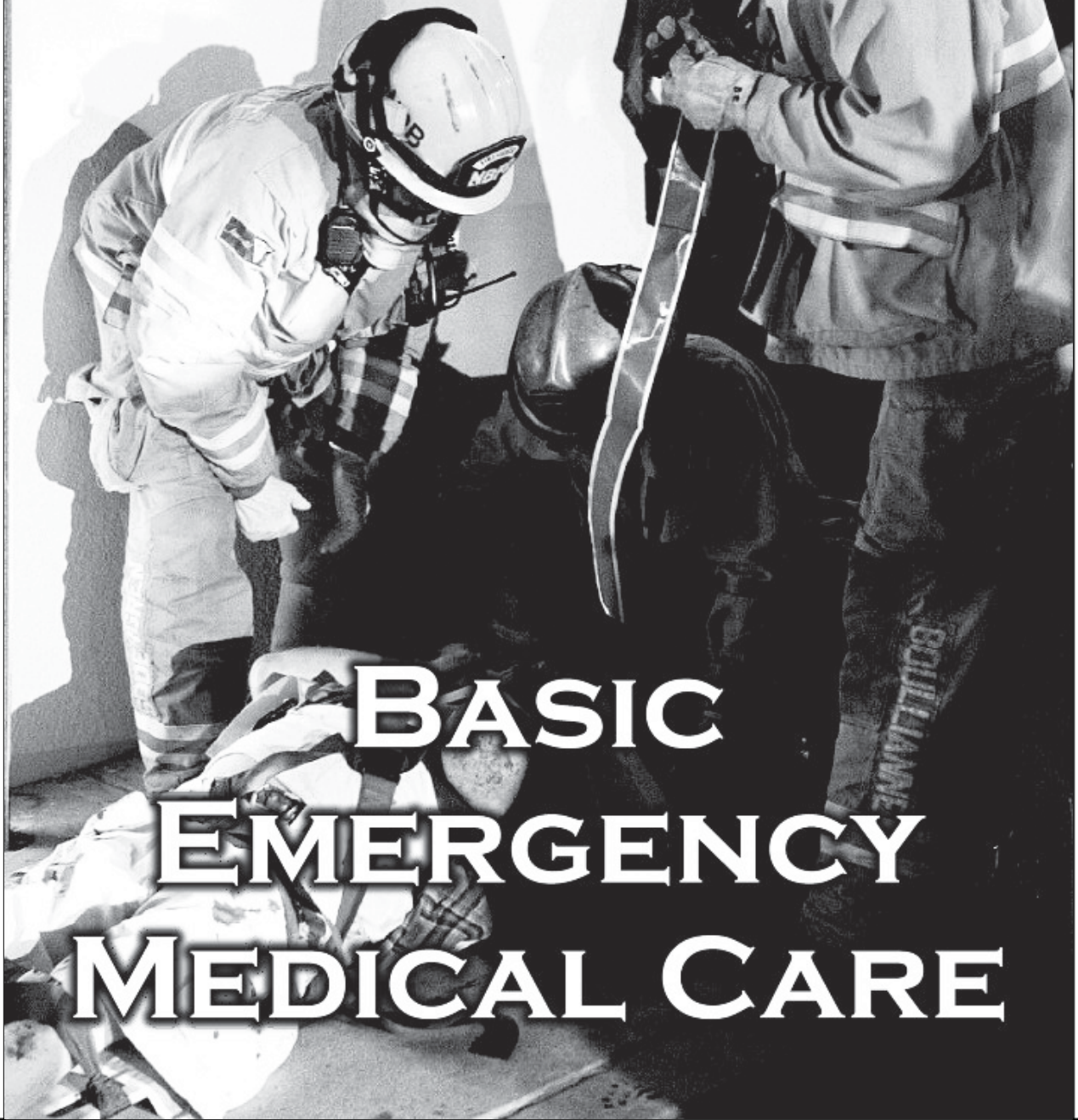




Missouri Division of Fire Safety
FIRE FIGHTER I & II



**BASIC
EMERGENCY
MEDICAL CARE**



UNIT OBJECTIVES

Upon completion of this unit of study, the student should be able to:

1. Define the principles of infection control and universal blood and body fluid precautions as prescribed for public safety workers.
2. Demonstrate the use of personal protective equipment used for protection from infection.
3. Perform the single-rescuer CPR, two-rescuer CPR, and management of an obstructed airway.
4. Identify three types and characteristics of external bleeding and demonstrate techniques for controlling external bleeding.
5. Identify characteristics of thermal burns and demonstrate procedures for handling thermal burns according to recognized procedures.
6. Identify symptoms and demonstrate emergency medical care of traumatic shock.
7. Identify the symptoms and demonstrate emergency medical care for ingested poisons and drug overdoses.



NFPA STANDARDS

Successful completion of the information in this section is necessary to fulfill the requirements of the following sections of NFPA 1001-2008:

4.3* Emergency Medical Care.

Minimum emergency medical care performance capabilities for entry-level personnel shall be developed and validated by the AHJ to include infection control, CPR, bleeding control, and shock management.

***All students* must successfully have completed an approved American Red Cross or American Heart Association CPR course and provide documentation to the Lead Instructor of course completion.**



NOTES	STUDENT GUIDE
	<p>I. Basic Prehospital Emergency Medical Care</p> <p>A. Most fire departments are responding to more medical related calls than ever before</p> <ol style="list-style-type: none">1. Fire fighters must have the basic knowledge and skills to deal with the most common types of injuries found at the scene of an emergency2. Many departments require personnel to be licensed to at least the Emergency Medical Technician level <p>B. The difference between life and death for an injured fire fighter may be the emergency medical care provided immediately by a fellow fire fighter</p> <p>II. Infection Control (<i>Essentials, p. 1104</i>)</p> <p>A. Body substance isolation (BSI) precautions</p> <ol style="list-style-type: none">1. One the primary concerns for fire fighters responding to medical emergencies is to protect themselves against exposure to infectious diseases2.<ol style="list-style-type: none">a. Too few precautions increase the risk of exposureb. Too many precautions can potentially alienate a patient

BASIC EMERGENCY MEDICAL CARE



MISSOURI DIVISION OF FIRE SAFETY FIRE FIGHTER I & II

NOTES	STUDENT GUIDE
	<ul style="list-style-type: none">3.<ul style="list-style-type: none">a. Exposure can occur when they contact a fire fighter's open wound or sore, including mucous membranesb. Even minor skin breaks around fingernails can be enough for a pathogen to enter the body4. Airborne pathogens are spread by droplets from breathing, coughing, and sneezing which can be absorbed through the eyes or inhalingB. Proper BSI protective equipment must be provided for personnel<ul style="list-style-type: none">1. Latex, vinyl or other synthetic gloves must be worn whenever there is a chance of contact with blood or blood fluids<ul style="list-style-type: none">a.b. Gloves must also be changed between patientsc. Vinyl and non-latex gloves are available for those with a latex allergy2.<ul style="list-style-type: none">a. Vigorous hand washing with soap and warm water is recommendedb. Alcohol-based hand cleaners help kill microorganisms and can be used when soap and water is not available



NOTES	STUDENT GUIDE
	<ul style="list-style-type: none">3. Eye protection should be worn to prevent splashing or spraying fluids from entering the body through the mucous membranes surrounding the eyes 4.<ul style="list-style-type: none">a. If the patient is alert and cooperative, the mask may be placed on the patient<ul style="list-style-type: none">(1) Reduces the ability to visualize and protect the airway(2) Respirations must be monitored and the mask removed if necessaryb. If tuberculosis is suspected, a high efficiency particulate air (HEPA) respirator is recommended 5. A surgical-type gown should be worn in cases of spilled or splashed fluids<ul style="list-style-type: none">a. Childbirth or multiple injuries produce considerable amounts of bloodb. Gloves, eye protection, and a mask are needed if a gown is call for 6.<ul style="list-style-type: none">a. If protective equipment is contaminated, it must not be touched without protection 7. Common sense must be the rule:<ul style="list-style-type: none">a.

BASIC EMERGENCY MEDICAL CARE

MISSOURI DIVISION OF FIRE SAFETY FIRE FIGHTER I & II



NOTES	STUDENT GUIDE
	<ul style="list-style-type: none">b. Always have BSI equipment immediately availablec. If in doubt, wear glovesd. Personnel should assume that any body fluid in any form, dried or otherwise, is infectious until proven otherwise <p>C. Infectious diseases encountered</p> <ul style="list-style-type: none">1. AIDS (acquired immune deficiency syndrome)<ul style="list-style-type: none">a. Although the most feared infectious disease, first responders have only a slight chance of exposure to HIV (human immunodeficiency virus)b.c. Transmission occurs through needle sticks, blood splash on mucous membranes, or blood contact with open skind. The incubation period for AIDS may be several months to years2. Hepatitis<ul style="list-style-type: none">a.b. Hepatitis A is acquired primarily through contact with stoolc. Other forms of hepatitis are acquired from contact with blood and other body fluids

BASIC EMERGENCY MEDICAL CARE



MISSOURI DIVISION OF FIRE SAFETY FIRE FIGHTER I & II

NOTES	STUDENT GUIDE
	<ul style="list-style-type: none">d. Transmission can occur through respiratory secretions or salivae. Meningitis is far easier to contract than TB <p>D. The Occupational Safety and Health Administration (OSHA) and the Centers for Disease Control (CDC) have issued guidelines and standards for infection control</p> <ul style="list-style-type: none">1. OSHA standard on bloodborne pathogens<ul style="list-style-type: none">a.b. Personnel must be given training in infectious disease control and limiting exposurec.d. Personal protective equipment must be supplied to personnel at no cost to prevent disease transmissione. Work practice controls must be in place to reduce the risk of exposure, such as pocket masks and disposable airway equipmentf. Response vehicles and work areas must be kept clean and sanitaryg. Containers used for potentially infectious materials must be properly labeledh.

BASIC EMERGENCY MEDICAL CARE



MISSOURI DIVISION OF FIRE SAFETY FIRE FIGHTER I & II

NOTES	STUDENT GUIDE
	<ol style="list-style-type: none">2. In 1994, the "Ryan White Comprehensive AIDS Resources Emergency (CARE) Act" became federal law<ol style="list-style-type: none">a. This law mandated a procedure for emergency personnel to find out if they had been exposed to life-threatening disease while providing patient care until 2006 when this section was droppedb. In 2009, this section of the law was again enacted and signed by President Obamac. Elements of the law<ol style="list-style-type: none">(1) Emergency response personnel covered include fire fighters, law enforcement officers, EMT's and volunteer First Responder(2) The CDC has published a list of potentially life-threatening infectious and communicable diseases covered by the law(3) Requires each state's public health officer to designate someone in every emergency response organization as a "designated officer"(4) Airborne disease exposure: requires medical facilities to notify the designated officer within 48 hours if personnel had contact with a patient infected with a life-threatening airborne disease, such as TB(5) Bloodborne or other infectious disease exposure: allows an emergency responder, who believes that he or she may have been exposed, may request a determination as to whether he or she was exposed

BASIC EMERGENCY MEDICAL CARE



MISSOURI DIVISION OF FIRE SAFETY FIRE FIGHTER I & II

NOTES	STUDENT GUIDE
	<ul style="list-style-type: none">(6) The difference is due to how an exposure is likely to be detected<ul style="list-style-type: none">(a) A responder may not realize a patient has an airborne disease until it is diagnosed at the hospital(b) Responders will know if they have had contact with a patient' body fluids but may not know if a bloodborne disease is present until it is diagnosed3. Tuberculosis compliance mandate<ul style="list-style-type: none">a. In 1994, the CDC issued guidelines for treating suspected or confirmed TB patientsb. Potential signs and symptoms of TB:<ul style="list-style-type: none">(1)(2)(3) Lethargy and weakness(4) Night sweats and feverc. A NIOSH-approved N-95 or HEPA respirator must be worn when:<ul style="list-style-type: none">(1) Caring for patients suspected of having TB such as from high-risk areas:<ul style="list-style-type: none">(a) Correctional institutions(b) Homeless shelters(c) Long-term care facilities



NOTES	STUDENT GUIDE
	<p>(d) Drug treatment centers</p> <p>(2) Transporting an individual from a high-risk area in a closed vehicle</p> <p>(3) Performing high-risk procedures such as endotracheal suctioning and intubation</p> <p>III. Emotional Stress (<i>Essentials, p. 1014</i>)</p> <p>A.</p> <ol style="list-style-type: none">1. Stress is a normal part of life2. When managed, it does not have to threaten one's well-being <p>B. Stress always poses a hazard for fire fighters</p> <ol style="list-style-type: none">1.<ol style="list-style-type: none">a. Noiseb. Weatherc. Unstable wreckaged. Fire by-products2.3.<ol style="list-style-type: none">a. Worry over performance and expertiseb. Guilt over poor patient outcomes



NOTES	STUDENT GUIDE
	<p>4. How stress is managed is critical to survival</p> <p>C. Dr. Hans Selye found that the body's response to stress has three stages (general adaptation syndrome)</p> <p>1. Stage 1: Alarm Reaction</p> <ul style="list-style-type: none">a. The sympathetic nervous system increases activityb.c. Signs<ul style="list-style-type: none">(1) Pupil dilate(2) Heart rate increases(3) Blood sugar increases(4) Blood pressure increases(5) Blood flow to skeletal muscles increase <p>2. Stage 2: State of Resistance</p> <ul style="list-style-type: none">a. Body returns to normal functioningb.c. The ability to cope depends on:<ul style="list-style-type: none">(1) Physical and mental health(2) Education(3) Experiences

BASIC EMERGENCY MEDICAL CARE



MISSOURI DIVISION OF FIRE SAFETY FIRE FIGHTER I & II

NOTES	STUDENT GUIDE
	<p>(4) Support systems</p> <p>3. Stage 3:</p> <p>a.</p> <p>b. Physical effects during this stage may include:</p> <p>(1) Enlargement of the adrenal glands</p> <p>(2) Wasting of the lymph nodes</p> <p>(3) Bleeding gastric ulcers</p> <p>c. The ability to resist or adapt to the stressor is lost</p> <p>d. Serious illness can occur</p> <p>D. A critical incident with a strong emotional response can produce different stress reactions</p> <p>1.</p> <p>a. May result from incidents such as large scale disasters or line-of-duty deaths and injuries</p> <p>b. Signs and symptoms may occur at the same time or within a very short time:</p> <p>(1) Physical</p> <p>(2) Cognitive (the ability to think)</p> <p>(3) Emotional</p> <p>(4) Behavioral</p>

BASIC EMERGENCY MEDICAL CARE



MISSOURI DIVISION OF FIRE SAFETY FIRE FIGHTER I & II

NOTES	STUDENT GUIDE
	<ul style="list-style-type: none">c. These are not signs of weakness but ordinary reactions to extraordinary situationsd. Immediate intervention by a physician or mental health professional may be needed if there appears to be:<ul style="list-style-type: none">(1) An acute medical problem such as chest pain or difficulty breathing(2) An acute psychological problem such as uncontrollable crying or inappropriate behaviore. Some signs or symptoms may not require intervention<ul style="list-style-type: none">(1) Difficulty eating or sleeping after a very traumatic accident(2) If not severe or long-lasting these may pose no immediate threat to health or safety <p>2.</p> <ul style="list-style-type: none">a. Known as post traumatic stress disorder (PTSD)b.c. Signs and symptoms include:<ul style="list-style-type: none">(1) Flashbacks(2) Nightmares(3) Feelings of detachment(4) Irritability

BASIC EMERGENCY MEDICAL CARE



MISSOURI DIVISION OF FIRE SAFETY FIRE FIGHTER I & II

NOTES	STUDENT GUIDE
	<ul style="list-style-type: none">(5) Sleep difficulties(6) Problems with personal relationshipsd. Can lead to alcohol or drug abusee. Requires intervention by a mental health professional <p>3.</p> <ul style="list-style-type: none">a. The earliest signs may be vague anxiety, boredom and apathy, and emotional exhaustionb. These can progress to physical complaints:<ul style="list-style-type: none">(1) Headaches(2) Significant sleep problems(3) Loss of emotional control(4) Irritability(5) Increasing depressionc.d. Without help, cumulative stress may become more severe:<ul style="list-style-type: none">(1) Long-term physical illness(2) Overwhelming fatigue(3) Severe withdrawal



NOTES	STUDENT GUIDE
	<ul style="list-style-type: none">(4) Paranoia(5) Suicidal thoughtse. Long-term psychological treatment is needed for any recovery <p>E. Causes of stress</p> <ul style="list-style-type: none">1. Some incidents have a higher stress potential:<ul style="list-style-type: none">a.b. Calls involving infants and childrenc.d. Cases of abuse and neglecte. Death of a coworker2. Stress can affect people differently<ul style="list-style-type: none">a. Two fire fighters on the same call may have opposite reactionsb. Judgments should never be made about another person's reactions to a situation3.4. One common stressor encountered by fire fighters is that their families and friends don't understand the demands and stress of the job

BASIC EMERGENCY MEDICAL CARE

MISSOURI DIVISION OF FIRE SAFETY FIRE FIGHTER I & II



NOTES	STUDENT GUIDE
	<p>F. Signs and symptoms of stress</p> <ol style="list-style-type: none">1. Types of stress<ol style="list-style-type: none">a. Eustress is the positive form and helps people work under pressure effectivelyb.2. Signs and symptoms include:<ol style="list-style-type: none">a.b. Irritability with peoplec. Nightmaresd.e. Loss of interest in sexual activityf. Anxietyg.h. Isolationi. Loss of interest in work <p>G. There are many ways the people deal with stress</p> <ol style="list-style-type: none">1. Develop more healthful and positive dietary habits<ol style="list-style-type: none">a. Avoid fatty foods and increase carbohydratesb. Reduce alcohol and caffeine consumption



NOTES	STUDENT GUIDE
	<ol style="list-style-type: none">2. Exercise regularly3. Devote time to relaxing and try relaxation techniques4. Take time away from work <p>IV. Scene Safety (<i>Essentials, p. 1018</i>)</p> <p>A.</p> <p>B. Hazardous materials may be encountered at any scene</p> <ol style="list-style-type: none">1. No actions should be taken other than protecting yourself, patients, and bystanders2. Fire fighters will not be able to help anyone if they become injured by contacting hazardous materials3. Once it is known that a victim is in contact with a hazardous material, personnel must wait until properly trained and equipped individuals can coordinate a safe approach to the scene4. Anyone treating a contaminated patient will become contaminated themselves <p>C. Rescue operations present additional hazardous for patients and emergency responders</p> <ol style="list-style-type: none">1. These operations may involve fires, vehicle accidents, explosions, collapses, and electrocutions2.

BASIC EMERGENCY MEDICAL CARE



MISSOURI DIVISION OF FIRE SAFETY FIRE FIGHTER I & II

NOTES	STUDENT GUIDE
	<p>3. It may necessary to secure the scene and wait for rescue specialists before starting patient care</p> <p>D.</p> <ol style="list-style-type: none">1. Personnel must be able to recognize potential problems such as dangerous people, people with weapons, people under the influence of alcohol or drugs, and individuals with severe emotional problems2. Many times the dispatcher will advise responders that the scene is potentially violent and should not be approached until safe<ol style="list-style-type: none">a.b. Patient care must wait until law enforcement has made the scene safe to work in3.<ol style="list-style-type: none">a. Wear safe clothing: nonslip shoes and practical clothing without unnecessary restrictionsb. Prepare equipment so it is not cumbersome, too heavy or too bulkyc. Carry a portable radio at all times when away from the vehicled. Decide in advance on safety roles<ol style="list-style-type: none">(1) Tasks should be divided between available personnel

BASIC EMERGENCY MEDICAL CARE



MISSOURI DIVISION OF FIRE SAFETY FIRE FIGHTER I & II

NOTES	STUDENT GUIDE
	<p>(2) Fire fighters not directly involved in patient care should constantly monitor the surroundings for dangerous people</p> <p>4.</p> <ul style="list-style-type: none">a. Observe the neighborhood and individuals on the streetb.c. Turn off the lights and siren near the scene to avoid attracting a crowdd. Look for signs of violence such as broken glass, overturned furniture, arguments or threats still in progresse.f. People's behavior will be unpredictable when they are under the influence of alcohol or drugs and they think fire fighters are the policeg. If anyone has a weapon or weapons are in view of a hostile person, your safety is in danger<ul style="list-style-type: none">(1) Almost any item can be used as weapon(2) Personnel should quickly withdraw and await the police if weapons are involvedh.

BASIC EMERGENCY MEDICAL CARE



MISSOURI DIVISION OF FIRE SAFETY FIRE FIGHTER I & II

NOTES	STUDENT GUIDE
	<ul style="list-style-type: none">i.j. Do not enter a crime scene or scene of violence until the police have secured it in case the perpetrator may still therek. Pets may become aggressive when their owner is injured and should be placed in another room <p>5. If there is danger at a scene, personnel must know how to react</p> <ul style="list-style-type: none">a.<ul style="list-style-type: none">(1) Get far enough away so there will be time to react if danger moves toward your new position(2)(3) Discard cumbersome equipment if it will slow your escape(4) Take cover and conceal yourself<ul style="list-style-type: none">(a) Cover is hiding behind something that protects from projectiles(b) Concealment is hiding behind an object that cannot protect you(c) Try to find a location that both conceals and protects(5)

BASIC EMERGENCY MEDICAL CARE



MISSOURI DIVISION OF FIRE SAFETY FIRE FIGHTER I & II

NOTES	STUDENT GUIDE
	<ul style="list-style-type: none">b. The portable radio is important safety equipment<ul style="list-style-type: none">(1) Remember to speak clearly and slowly to be understood(2) Share vital scene information to stop others from entering the same danger(3) Advise the dispatcher of the situation, the number of people involved and if weapons are presentc. Reevaluate the scene and don't reenter until law enforcement has determined the scene to be safe<ul style="list-style-type: none">(1)(2) Stay alert throughout the entire time on scene(3) If weapons or drugs are found on the patient, call for law enforcementd. Make sure everything that occurred is documented after the call <p>V. Basic Life Support - CPR</p> <p>Each student must successfully complete an approved CPR course and provide documentation to the Lead Instructor</p>



NOTES	STUDENT GUIDE
	<p>VI. Bleeding Control (<i>Essentials, p. 1041</i>)</p> <p>A. The circulatory (cardiovascular) system</p> <ol style="list-style-type: none">1.2. Main components<ol style="list-style-type: none">a. The heart pumps blood to supply oxygen and nutrients to the body's cellsb. Blood vessels<ol style="list-style-type: none">(1)<ol style="list-style-type: none">(a) Under pressure when heart contracts(b) Taking blood pressure measures arterial pressure(2) Capillaries<ol style="list-style-type: none">(a) Supply the cells with oxygen and nutrients(b) Absorb carbon dioxide and waste products from the cells(c) Empties blood depleted of oxygen and with carbon dioxide and wastes into the veins(3)



NOTES	STUDENT GUIDE
	<p data-bbox="716 411 1382 554">c. Perfusion is the supply of oxygen to and the removal of wastes from the cells and tissues as a result of the flow of blood through the capillaries</p> <p data-bbox="764 600 1390 709">(1) Cells will not receive adequate oxygen and dangerous wastes will build up if blood is not adequately circulated</p> <p data-bbox="764 751 1365 861">(2) Inadequate perfusion of the body's tissues and organs is called hypoperfusion, also called "shock"</p> <p data-bbox="618 907 646 934">B.</p> <p data-bbox="667 1020 1357 1087">1. Perfusion of cells will not occur if enough blood volume is lost</p> <p data-bbox="667 1136 1312 1203">2. Inadequate perfusion will lead to the death of tissues and organs</p> <p data-bbox="667 1251 1377 1318">3. Cells of the brain, spinal cord, and kidneys are the most sensitive to inadequate perfusion</p> <p data-bbox="618 1367 898 1394">C. External bleeding</p> <p data-bbox="667 1440 1382 1507">1. Blood and open wounds pose high infection risk to fire fighters and BSI precautions are necessary</p> <p data-bbox="667 1556 695 1583">2.</p> <p data-bbox="716 1629 1357 1696">a. Bright red blood spurting from an artery with each heartbeat</p> <p data-bbox="716 1745 743 1772">b.</p>

BASIC EMERGENCY MEDICAL CARE



MISSOURI DIVISION OF FIRE SAFETY FIRE FIGHTER I & II

NOTES	STUDENT GUIDE
	<ol style="list-style-type: none">3.<ol style="list-style-type: none">a. Dark red or maroon colored blood flowing steadily from a veinb. Large veins may suck in debris or air bubblesc.d. Bleeding from the large neck veins can draw in air and carry an air bubble or embolism to the heart and potentially stop it4.<ol style="list-style-type: none">a. Blood slow and oozing from capillariesb.c. Can occur around the edges of serious wounds5. The severity of bleeding depends on a patient's condition and the amount of blood lost<ol style="list-style-type: none">a. Bleeding is considered serious if a patient begins to show the signs and symptoms of shockb. A body's response to bleeding is to constrict blood vessels and clot the bloodc. A serious injury may prevent effective clottingd. Uncontrolled bleeding and blood loss can lead to death

BASIC EMERGENCY MEDICAL CARE



MISSOURI DIVISION OF FIRE SAFETY FIRE FIGHTER I & II

NOTES	STUDENT GUIDE
	<p>6. Control of external bleeding is needed to prevent and manage shock</p> <p>a. Direct pressure</p> <p>(1)</p> <p>(2) If bleeding is mild</p> <p>(a) Apply pressure on a sterile dressing or clean cloth</p> <p>(b) Apply pressure until the bleeding is controlled</p> <p>(c) Apply bandages to the dressing after bleeding has been controlled</p> <p>(3) Never remove a dressing from a wound because it may destroy clots and cause further injury</p> <p>(a) If a dressing becomes blood soaked, apply additional dressings on top and hold it firmly in place</p> <p>(b) Enough pressure must be applied to control the bleeding</p> <p>(c) A tighter bandage, which does not affect circulation, may be applied for bleeding control</p>



NOTES	STUDENT GUIDE
	<ul style="list-style-type: none">b. Elevation can be used in conjunction with direct pressure<ul style="list-style-type: none">(1)(2) Continue applying direct pressure until the bleeding is controlledc. Pressure points<ul style="list-style-type: none">(1) Sites where an artery is close to the skin and lies directly over a bone(2)(3) Applying pressure to the brachial arteries in the upper arms can help control bleeding from an arm wound(4) To find the brachial artery:<ul style="list-style-type: none">(a) Hold the patient's arm at a right angle to body with the hand facing up(b) Locate the groove between the biceps muscle and upper arm bone about midway between the elbow and armpit(c) Cradle the upper arm in the palm of the hand and position your fingers in this groove(d) Compress the artery against the underlying bone by pressing the fingers into groove



NOTES	STUDENT GUIDE
	<p>(5) Pressure can be applied to the femoral artery on the medial side of the thigh to control bleeding from a leg</p> <p>d. Tourniquet</p> <p>(1) Tourniquets were once a commonly recommended first aid treatment</p> <p>(2) However, concerns about complications from lack of blood supply causing tissue damage, injury to nerves, and the possibility of actually increasing blood loss have kept EMS systems from using them</p> <p>(3) Military conflicts in Afghanistan and Iraq have resulted in a large number of penetrating extremity wounds, and tourniquets have been used extensively</p> <p>(4) Several recent military reports have concluded patients are more likely to survive severe limb trauma with hemorrhage if a tourniquet is used, and that the complication rate is very low</p> <p>(5) EMS systems should consider developing protocols that allow tourniquet use in patients with moderate to severe hemorrhage from limb wounds</p> <p>7.</p> <p>a. The injury causes increased pressure in the skull which forces fluids out</p> <p>b. Pressure will be increased in the skull by attempting to stop this discharge</p>



NOTES	STUDENT GUIDE
	<ul style="list-style-type: none">c. This drainage should be allowed to flow freely and collected with gauze <p>8. Nosebleeds may be caused by trauma or other medical problems</p> <ul style="list-style-type: none">a. Have the patient sit down and lean forwardb. Apply or have the patient apply direct pressure to fleshy portion around the nostrilsc. Keep the patient calm and quietd. Do not let the patient lean backe. If the patient becomes unconscious, place the patient in the recovery position on his or her side and be prepared to provide suction or airway management <p>D. Internal bleeding</p> <ul style="list-style-type: none">1. Internal bleeding can be serious and may result from:<ul style="list-style-type: none">a. Internal organ damageb. Blood loss which cannot be seen without any signs of external injuriesc. Injuries to the extremities such as a fractured femur cause tissue and blood vessel damage2. Blunt trauma is the leading cause of internal bleeding and may result from:<ul style="list-style-type: none">a.b.

BASIC EMERGENCY MEDICAL CARE



MISSOURI DIVISION OF FIRE SAFETY FIRE FIGHTER I & II

NOTES	STUDENT GUIDE
	<ul style="list-style-type: none">c. Vehicle-pedestrian collisionsd. Blast injuries3.<ul style="list-style-type: none">a. Gunshot woundsb. Stab woundsc. Impaled objects4. Symptoms of internal bleeding<ul style="list-style-type: none">a.b.c. Patient is thirstyd. Patient feels anxious or restless5. Signs of internal bleeding<ul style="list-style-type: none">a.b. Rapid and weak pulsec. Shallow and rapid respirationsd. Altered level of consciousnesse.f. Tender or rigid abdomeng. Dilated pupils

BASIC EMERGENCY MEDICAL CARE



MISSOURI DIVISION OF FIRE SAFETY FIRE FIGHTER I & II

NOTES	STUDENT GUIDE
	<ul style="list-style-type: none">6.<ul style="list-style-type: none">a. Wounds that have penetrated the skullb.c. Blood in vomitd. Bruises on the necke. Bruises on the chest or wounds that have penetrated the chestf. Bruises or wounds to the abdomeng.h. Bleeding from the rectum or vaginai. Fractures7. Treatment for internal bleeding<ul style="list-style-type: none">a.b. Perform primary assessmentc. Keep patient lying stilld. Loosen restrictive clothinge.f.g. Reassure patient and keep patient calmh. Transport immediately



NOTES	STUDENT GUIDE
	<p>VII. Shock (<i>Essentials, p. 1050</i>)</p> <p>A.</p> <ol style="list-style-type: none">1. Untreated shock will lead to death2. If all of the body's blood vessels dilate at one time, there would not be enough blood to fill the entire circulatory system causing shock3. If blood is lost through external bleeding, the heart rate will increase to compensate causing more blood loss and shock <p>B. Types of shock</p> <ol style="list-style-type: none">1.<ol style="list-style-type: none">a.b. Uncontrolled bleeding or hemorrhage is called hemorrhagic shock2. Cardiogenic: caused by the heart failing to pump enough blood to all body parts3. Neurogenic<ol style="list-style-type: none">a.b.c. Septic: bloodstream shock caused by a massive infection

BASIC EMERGENCY MEDICAL CARE



MISSOURI DIVISION OF FIRE SAFETY FIRE FIGHTER I & II

NOTES	STUDENT GUIDE
	<p>C. Signs and symptoms</p> <ol style="list-style-type: none">1.2. Nausea with possible vomiting3. Dizziness4. Thirsty5. Restlessness and fear6. Pale, cool, and clammy skin7. Eyes: lackluster and pupils dilated8.9. Rapid and shallow breathing10. Falling blood pressure <p>D. Treatment</p> <ol style="list-style-type: none">1.2. Maintain open airway3. Administer to obvious injuries4. Keep patient calm5.6. Elevate lower extremities7.



NOTES	STUDENT GUIDE
	<p>8. Reassure patient</p> <p>9. Do not give anything by mouth</p> <p>VIII. Burns</p> <p>A. Types of burns</p> <ol style="list-style-type: none">1. _____: from fire, steam, and hot objects2. _____: from caustic substances, such as acids and alkalis3. Electrical: from contact with electrical currents4. Light: burns to the eyes from intense light and to the skin from ultraviolet light5. Radiation: from nuclear sources <p>B. Classifications</p> <ol style="list-style-type: none">1.<ol style="list-style-type: none">a. Involve top layer of skinb. Involve reddening of skin and pain2.<ol style="list-style-type: none">a. Involve the top two layers of skinb. Involve intense pain, white to red skin and blistersc. Produce severe pain and swelling

BASIC EMERGENCY MEDICAL CARE



MISSOURI DIVISION OF FIRE SAFETY FIRE FIGHTER I & II

NOTES	STUDENT GUIDE
	<ul style="list-style-type: none">3.<ul style="list-style-type: none">a. Extend through all skin layers and may involve muscles, bone, or organsb. Can be dry and leathery and may appear white, dark brown, or charredC. Treatment<ul style="list-style-type: none">1. Complete scene size-up for safety before starting care<ul style="list-style-type: none">a. Check for cause of burns: fire, hazardous materials, electrical lines, etc.b. If possible, remove patient from hazard area2.3. Thermal burn treatment<ul style="list-style-type: none">a. Minor burns<ul style="list-style-type: none">(1)(2) Cover entire burn area with dry, sterile dressing(3) Do not use ice, ointment, lotion, or antiseptic(4) Do not break blistersb. Major burns<ul style="list-style-type: none">(1) Call for advanced assistance

BASIC EMERGENCY MEDICAL CARE



MISSOURI DIVISION OF FIRE SAFETY FIRE FIGHTER I & II

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	<ul style="list-style-type: none">(2) Check for signs of circulation (breathing, coughing or movement)(3)(4) Make sure the victim is no longer in contact with smoldering materials or exposed to smoke or heat(5)(6) Elevate the burned body part or parts above heart level, when possible(7) Cover the area of the burn with a cool, moist, sterile bandage; clean, moist cloth; or moist towels(8)(9) If fingers or toes are involved, separate between each with a sterile pad before dressing <p>4. Chemical burn treatment</p> <ul style="list-style-type: none">a. Maintain airwayb.c. If the burning chemical is a powder-like substance, such as lime, brush it off the skin before flushingd. Remove clothing or jewelry that has been contaminated by the chemical



NOTES	STUDENT GUIDE
	<ul style="list-style-type: none">e. Apply a cool, wet cloth or towel to relieve painf. Wrap the burned area loosely with a dry, sterile dressing or a clean clothg. Rewash the burned area for several more minutes if the person experiences increased burning after the initial washing <p>5. Electrical burn treatment</p> <ul style="list-style-type: none">a.b. Turn off the source of electricity if possiblec. Burns may not be the most serious problem as cardiac arrest, internal injuries, and nervous system damage can occur with electrical injuriesd. Check for signs of circulation (breathing, coughing or movement)e. Prevent shock, lay the person down with the head slightly lower than the trunk and the legs elevatedf. If the person is breathing, cover any burned areas with a sterile gauze bandage, if available, or a clean clothg.



NOTES	STUDENT GUIDE
	<p>IX. Poisonings</p> <p>A. Poison: any substance that can cause illness or death when consumed or absorbed by the body</p> <p>B.</p> <ol style="list-style-type: none">1. 90% of all poisonings involve children<ol style="list-style-type: none">a. Household cleanersb. Prescription and nonprescription medicationc. Insecticidesd. Plants2. Symptoms of ingested poisons<ol style="list-style-type: none">a.b. Diarrheac. Drowsiness or unconsciousnessd. Cramps or severe abdominal paine.f. Irregular or abnormal pulseg. Convulsionsh.i. Unusual breath odor or odor on clothesj. Sweating

BASIC EMERGENCY MEDICAL CARE



MISSOURI DIVISION OF FIRE SAFETY FIRE FIGHTER I & II

NOTES	STUDENT GUIDE
	<ul style="list-style-type: none">k. Irregular pupilsl. Excessive salivating or foaming at the mouth <p>7. Emergency treatment</p> <ul style="list-style-type: none">a. Perform scene size-upb.c. Attempt to identify what was ingestedd.e. Follow the instruction given by poison control center and label on the item swallowedf. Do not give the patient anything by mouth unless directed by the poison control center or a physiciang. Provide care for shockh. Transport victim to medical facility <p>C. Inhaled poisons</p> <ul style="list-style-type: none">1.2. Signs and symptoms of inhaled poisoning depends on the source of the poison



NOTES	STUDENT GUIDE
	<p>3. Treatment</p> <ul style="list-style-type: none">a.b. Perform primary assessment and life-support measures as necessaryc. Provide care for shockd. <p>X. Drug Abuse/Overdose</p> <ul style="list-style-type: none">A. The signs and symptoms of drug abuse or overdose can vary from patient to patient, even for the same drugB.<ul style="list-style-type: none">1. Drug abusers may be calm at first and then become violent2. Personnel must always stay alert and ready to protect themselvesC. Significant signs and symptoms<ul style="list-style-type: none">1. Stimulants<ul style="list-style-type: none">a. Excitementb. Increased pulse and breathingc. Rapid speechd. Dilated pupils

BASIC EMERGENCY MEDICAL CARE



MISSOURI DIVISION OF FIRE SAFETY FIRE FIGHTER I & II

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	<ul style="list-style-type: none">e. Sweating2. Depressants<ul style="list-style-type: none">a. Sluggish, sleepyb. Lack of coordinationc. Slurred speechd. Slowed pulse and breathing3. Hallucinogens<ul style="list-style-type: none">a. Rapid pulseb. Dilated pupilsc. Flushed faced. Anxiety, fearfulness, paranoiae. Hallucinations4. Narcotics<ul style="list-style-type: none">a. Reduced pulse and breathingb. Pinpoint pupilsc. Heavy sweatingd. Sleepye. Respiratory arrest may occur

BASIC EMERGENCY MEDICAL CARE



MISSOURI DIVISION OF FIRE SAFETY FIRE FIGHTER I & II

NOTES	STUDENT GUIDE
	<p data-bbox="618 411 878 443">D. Emergency care</p> <ol data-bbox="667 489 1365 1087" style="list-style-type: none"><li data-bbox="667 489 1365 558">1. Determine scene safety - always get law enforcement assistance<li data-bbox="667 604 691 636">2.<li data-bbox="667 682 1365 751">3. Monitor vital signs and be alert for respiratory arrest<li data-bbox="667 798 1365 867">4. Talk to the patient and continue to reassure him or her<li data-bbox="667 913 691 945">5.<li data-bbox="667 991 1016 1022">6. Provide care for shock<li data-bbox="667 1068 691 1100">7. <p data-bbox="570 1251 1203 1283">XI. Basic Emergency Medical Care Summary</p> <ol data-bbox="618 1329 1398 1892" style="list-style-type: none"><li data-bbox="618 1329 1398 1440">A. All personnel who have the potential for contacting any patient must wear appropriate body substance isolation equipment<li data-bbox="618 1486 1398 1598">B. Personal protective equipment is as important when dealing with medical emergencies as when fighting a fire<li data-bbox="618 1644 1398 1713">C. Consider scene safety for emergency personnel before attempting to provide care<li data-bbox="618 1759 1203 1791">D. Do only what you have been trained to do<li data-bbox="618 1837 1398 1892">E. Never go beyond your level of training when dealing with a medical emergency